

documents a suggestion to use the recited coupled molecules in a method as claimed. Even so, the Examiner asserts that a person skilled in the art would substitute the tagged polysaccharide of Arbige for that of Gaillard "for the art recognized benefit of being able to visibly follow the precipitation of small amounts of nucleic acids."

Applicants respectfully suggest that the Examiner has approached the invention in hindsight, ignoring almost five decades of work on isolating DNA, and completely ignoring the concerted effort of the biotechnology industry and the academic research community in the last 30 years to simplify DNA purification. Apart from asserting the benefit of being able to visibly follow nucleic precipitation, the Examiner has not pointed to a single reference that even hints at the use of a colored carrier molecule in a method for precipitating nucleic acid. The desire to visualize does not solve the problem of how to visualize small amounts of nucleic acid, and nothing in the cited art casts any light on a solution. If the method were as obvious as the Examiner suggests, surely it would have been possible to find one such example, especially since dye labeled polysaccharides are commercially available. Applicant also notes that those skilled in the art are appropriately reluctant to add to nucleic acid preparations any compound that could have an unknown downstream effect upon the prepared nucleic acid. For example, some dyes in a preparation can inhibit subsequent *Taq* polymerase-based cycle sequencing reactions. In contrast, a stated advantage of the invention (Specification, page 4, lines 2-5) is that "the modified carrier does not adversely affect subsequent reactions performed with precipitated nucleic acid." Applicant maintains that, in view of all of the above, it is not obvious to develop of a nucleic acid precipitation method that employs a non-interfering compound that can be directly visualized.

As far as is known to the applicant, none of the colored compounds mentioned by the Examiner are sold for any purpose associated with nucleic acid precipitation. Accordingly, the applicant believes that the absence of any mention of the claimed use of a coupled polymeric carrier and indicator molecule for nucleic acid precipitation speaks to the novelty and non-obviousness of the method claims. Moreover, in the absence of relevant prior art, applicant believes he is entitled to a claim having the scope of Claim 1. All of the claims that depend from independent claim one are merely embodiments of the invention which derived their patentability, at least, from their dependence upon patentable Claim 1.

Applicants also traverse the rejection of Claim 13 as amended. The Examiner has pointed to no art that depicts a glycogen molecule having any indicator molecule coupled thereto. For the reasons noted above, the mere possibility that such a compound could be envisioned is insufficient under § 103 to render the compound obvious. There is no mention in the cited art of a labeled glycogen and no reason at all to assume that labeled polysaccharides are interchangeable. Moreover, applicant's claim is drawn to an aqueous composition that comprises the coupled indicator-glycogen molecules in an aqueous

composition with salt and alcohol. Although the examiner has asserted that such a composition would be obvious because salt and alcohol are used to precipitate nucleic acid, the applicant maintains that, without any articulated motivation to use the coupled indicator and glycogen molecule, the skilled artisan would have had no motivation to make the claimed aqueous composition.

As above, the applicant believes that Claim 13 is allowable and that Claims 14-24 are also patentable, at least because they depend from an allowable claim.

Finally, with regard to both the product and method claims, applicant traverses the rejections because the commercial success of the product demonstrates the non-obviousness of the claimed invention. Applicant first directs the Examiner's attention to the article from Trends in Biochemical Sciences cited as reference R by the Examiner on an attachment to Paper No. 7. This paper, addressed in applicant's prior response, refers to applicant's product (Pellet Paint) as "all the rage." If, indeed, the compound, or its use, were so obvious to those skilled in the art, applicant suggests that it would not have caused the stir in the marketplace that it has.

Applicant also submits in support of its commercial success argument a Declaration by Lisa Johnson, Director of Business Development for Novagen, Inc., assignee of the pending application. The commercial success of Pellet Paint is attributable to the product itself rather than to pricing or other marketing considerations. Ms. Johnson declares that Novagen is a small company having a modest annual marketing budget for all of its products. Novagen has not reduced the price of the product to boost sales and has marketed the product in a typical fashion (*see* Declaration, paragraphs 5-14). Yet even so, the product has become a major product for Novagen, and one for which the company is widely known, as Ms. Johnson declares in paragraphs 15-19. Ms. Johnson declares that sales of the Pellet Paint product have increased at least about 10% per year every year that the product has been on sale. Sales topping \$100,000 are projected for 1999.

In the three years since the Pellet Paint product was introduced, it has become the best selling product in unit sales out of almost 900 products available in Novagen's catalog, the fourth best selling retail product and the fifth best selling product in total dollar sales. The Pellet Paint product is also purchased from Novagen as an OEM product for resale under the trademark SeeDNA by Amersham Life Science, a distributor of molecular biological reagents. The product is sold into many of the world's great public and private research institutions, where it wins the praise of researchers, as noted in the attached Declaration.

Ms. Johnson further declares that while Pellet Paint was the first dye-coupled glycogen product known to the assignee, a second such product, sold under the GlycoBlue trademark, was introduced by competitor Ambion soon after Pellet Paint was introduced to

the marketplace. Even in the face of the competitive product, Pellet Paint continues to set sales records for Novagen.

For these reasons, applicant maintains that the methods and products as claimed were not obvious to the skilled artisan as of the filing date of the application and therefore respectfully requests reconsideration of the merits of this patent application. Should the Examiner remain unconvinced by the applicant's response, the favor of a personal or telephonic interview is respectfully requested.

A petition for two months extension of time is submitted with this response so that the response will be deemed to have been timely filed. No other extension of time is believed to be required, though if any other is required in this or any subsequent response, please consider this to be a request for the appropriate extension of time and a request to charge the appropriate fee to Deposit Account 17-0055. Should any other fee be due, in this or any subsequent response, please consider this a request to charge the fee due to the same deposit account.

Respectfully submitted,



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